



---

## OFFICE MEMORANDUM

---

**DATE:** June 17, 1999

**TO:** Region Engineers  
Region Associate Engineers - Delivery  
Region Construction Engineers  
Region Materials Supervisors/Engineers  
TSC Managers  
Resident/Project Engineers

**FROM:** C. Thomas Maki  
Chief Operations Officer

Gary D. Taylor  
Chief Engineer/Deputy Director  
Bureau of Highway Technical Services

**SUBJECT:** Bureau of Highway Instructional Memorandum 1999-10  
Concrete Quality Assurance/Quality Control (QA/QC) Program

The 1999 construction season marks the first year of full implementation of the department's Concrete QA/QC Program. This program has been expanding incrementally over the past seven years with great success. The contractors, suppliers, and materials testing agencies have accepted the program and have geared up for broad application of the special provisions.

Starting this construction season the special provisions are included in nearly all concrete projects. The guideline for when to use these special provisions sets a minimum quantity of concrete per project for inclusion. When they are included, the special provisions should not be waived unless a benefit to the department can be clearly demonstrated. If the special provisions are waived, a contract modification should be initiated with the benefits to the contractor and department clearly identified and appropriate credit incorporated in the contract.

The concrete QC special provision makes the contractor responsible for establishing a quality control plan, and for conducting concrete quality control testing to ensure that only specification materials are incorporated into the project. The concrete QA special provision gives the contractor the responsibility of developing concrete mix designs within established parameters that will meet the slump and air specifications in the standard specifications, and also provide a minimum compressive strengths at 28 days. In addition, the QA special provision requires the contractor to mold, cure, and deliver compressive strength cylinders to the department that provide a representative random sample of the concrete mixture furnished to the project. The department is required to break these cylinders and report the compressive strength.

The Concrete QA/QC Program eliminates the need for the department to provide mix designs, better utilizes inspectors, and provides a statistically valid representation of the concrete properties on which to base acceptance and payment decisions. If the special provisions are waived, the old method specification

approach is the fallback position with responsibility for concrete mix design, sampling, testing, and quality control coming back to the department.

There is allowance in the special provision for the engineer to waive acceptance testing on small quantities and to pay at 100 percent of the contract unit price. This waiver can be made while still holding the contractor responsible for the quality of the mix design and all aspects of quality control. There is also allowance in the special provision to combine small quantities of concrete placed intermittently. This gives the engineer the necessary flexibility to establish a lot sampling frequency that provides the required quality assurance and a valid sample on which to base acceptance and payment decisions.

The regions have the necessary means to carry out the acceptance strength testing for concrete QA/QC projects, along with other materials testing. One of these means is the option to contract out the cylinder testing as needed. The Construction and Technology Division may also be available to perform some of this testing. The engineer should contact the Materials Research Group at 517-322-5701 to discuss this possibility.

Other issues relating to simplification and interpretation of these specifications are currently being addressed. Further suggested changes to these special provisions are always welcome. Please contact Judy Ruszkowski (517-322-5669) or John LaVoy (517-335-2244) of the Construction and Technology Division for questions or comments.

---

C. Thomas Maki  
Chief Operation Officer

---

Gary D. Taylor, Chief Engineer/Deputy Director  
Bureau of Highway Technical Services

Subject Index: Concrete

BOHTS:JTL:JAR:jp

cc:	Lansing C&T Division Engineers	MRBA
	Lansing C&T Division Technicians	MAA
	Real Estate, M. Frierson	MAPA
	Design Division, P. Miller	MCA
	Maintenance Division, C. Roberts	MCPA
	Traffic & Safety Division, J. O'Doherty	FHWA
	T. Maki	AUC
	G. Taylor	CRAM
	J. Culp	MAA
	J. Klee	A. Suber
	V. Blaxton	G. Mayes
	B. Jay	P. O'Rourke
	K. Trentham	D. Smiley
	S. Kulkarni	J. Staton
	J. Reincke	R. Till

R. Knapp  
J. Ruszkowski  
T. Hynes

S. Cook  
R. Endres  
B. MacNall